

#### APPLICATION FOR VARIANCE

State Form 44400 (R7 / 10-13) Approved by State Board of Accounts, 2013

ANG 2 5 REC'D

### INDIANA DEPARTMENT OF HOMELAND SECURITY CODE SERVICES SECTION

302 West Washington Street, Room W246 Indianapolis, IN 46204-2739 http://www.in.gov/dhs/fire/fp\_bs\_comm\_code/



INSTRUCTIONS: Please refer to the attached four (4) page instructions.  Attach additional pages as needed to complete this application.	Variance number (Assigned			
	15-10	) - 0 (		
1. APPLICANT INFORMATION (Person who would be in violation if variance is not granted				
Name of applicant	Title			
BOBBIE BURKE  Name of organization	OWNER Telephone number			
	(812) 825- 7979			
BMG AVIATION, INC Address (number and street, city, state, and ZIP code)	(012) 020-1919			
984 S KIRBY ROAD BLOOMINGTON IN 47403				
2. PERSON SUBMITTING APPLICATION ON BEHALF OF THE APPLICANT (If not submitte	d by the applicant)			
Name of applicant	Title			
STEPHEN C. HOFFMAN	PRESIDENT			
Name of organization	Telephone number			
HOFFMAN ENGINEERS P.C.	(765) 537-2991			
Address (number and street, city, state, and ZIP code)				
8261 WEST BASE LINE ROAD PARAGON IN 46166				
3. DESIGN PROFESSIONAL OF RECORD (If applicable)				
Name of design professional	License number			
STEPHEN C. HOFFMAN	60016188			
Name of organization	Telephone number	· ·		
HOFFMAN ENGINEERS P.C. Address (number and street, city, state, and ZIP code)	(765) 537-2991	(765) 537-2991		
8261 WEST BASE LINE ROAD PARAGON IN 46166				
4. PROJECT IDENTIFICATION				
Name of project	State project number	County		
WATER FOR FIRE FLOW REQUIREMENTS	375119	MONROE		
Address of site (number and street, city, state, and ZIP code)		.1		
984 S KIRBY ROAD BLOOMINGTON IN 47403				
Type of project				
☑ New    ☐ Addition    ☐ Alteration    ☐ Change of occupancy	☐ Existing			
5. REQUIRED ADDITIONAL INFORMATION				
The following required information has been included with this application (check as applicable):	The state of the s	2000		
A check made payable to the Indiana Department of Homeland Security for the appropriate	amount. (see instructions)	16.		
One (1) set of plans or drawings and supporting data that describe the area affected by the	requested variance and any pro	oposed alternatives.		
Written documentation showing that the local fire official has received a copy of the variance	application.			
Written documentation showing that the local building official has received a copy of the vari	ance application.			
6. VIOLATION INFORMATION				
Has the Plan Review Section of the Division of Fire and Building Safety issued a Correction Order?				
☐ Yes (If yes, attach a copy of the Correction Order.) ☐ No				
Has a violation been issued?				
☐ Yes (If yes, attach a copy of the Violation and answer the following.) ☐ No				
Violation issued by:				
☐ Local Building Department ☐ State Fire and Building Code Enforcement Sec	ction	artment		

7. DESCRIPTION OF REQUESTED VARIANCE						
Name of code or standard and edition involved	Specific code section					
IBC 2006 IND BLDG CODE 2008	412.2.6					
Nature of non-compliance (Include a description of spaces, equipment, etc. involved as necessary.)  Required fire flow for this building is 850 gpm sprinkler flow, + 500 gpm hose flow, for a total of 1350 gpm. The new system (addition of 1394 LF of pipe to tie two city water systems together) will provide 1200 gpm at the lowest level of the nearest storage tank. Request is to waive the 150gpm difference between required & provided.						
8. DEMONSTRATION THAT PUBLIC HEALTH, SAFETY, AND WELFA	RE WILL BE PROTECTED					
Select one of the following statements:						
Non-compliance with the rule will not be adverse to the public health						
Applicant will undertake alternative actions in lieu of compliance with public health, safety, or welfare. Explain why alternative actions wo	n the rule to ensure that granting of the variand ald be adequate ( <i>be specific</i> ).	ce will not be adverse to				
Facts demonstrating that the above selected statement is true: The new water lines installed will provide adequate water flow to gpm. The new water lines will not provide an additional 500 gpm will, however, provide 350 gpm of extra flow even when the tank the flow is increased (by calculation) to 1500 gpm then the press another foot of water in it, it would make up the pressure different water flow would be adequate. Also, the fire department is on the the shortfall.	for exterior hoses when the water tank is at its lowest point. Node pressure of 3 ure drops to 38.91 psi (difference of .12 pce (2.31 ft = 1 psi 1 ft=.43). This would n	s at its lowest water level. It 9.03 psi @ 1200 gpm. When bsi) (which when the tank has nean that in most cases the				
	CNIFICANT STRICTURE					
9. DEMONSTRATION OF UNDUE HARDSHIP OR HISTORICALLY SIGNSelect at least one of the following statements:	SNIFICANT STRUCTURE					
<ul> <li>Imposition of the rule would result in an undue hardship (unusual diffic</li> <li>Imposition of the rule would result in an undue hardship (unusual diffic</li> <li>Imposition of the rule would result in an undue hardship (unusual diffic</li> </ul>	culty) because of major operational problems in culty) because of excessive costs of additional of	the use of the building or structure. or altered construction elements.				
Imposition of the rule would prevent the preservation of an architectur	ally or a historically significant part of the buildir	ng or structure.				
Facts demonstrating that the above selected statement is true: Utility services shortfallThere is no greater water flow available	e without rebuilding over 3,000 ft of city n	nains.				
10. STATEMENT OF ACCURACY						
I hereby centify under penalty of perjury that the information cont	ained in this application is accurate.					
	ase print name	Date of signature (month, day, year)				
	ephen C. Hoffman	5 AUG 15				
	ase print name	Date of signature (month, day, year)				
1 / 1 / 1 / 1/1/1/1/1/1/1/1/1/1/1/1/1/1	ephen C. Hoffman	5 AUG 15				
11. STATEMENT OF AWARENESS (If the application is submitted of		st sign the following statement.)				
I hereby certify under penalty of perjury that I am aware of this requ						
Signature of applicant Ple	ase print name	Date of signature (month, day, year)				
Bo	obbie Burke	5 AUG 15				

### **FIRE FLOW CALCULATIONS**

50F/

#### SCENARIO

Demand at the site = 1,200 gpmSW Tank modeled at low tank = 1,010 ft

Use 8" pipe (P-6) from Kirby Rd to Boone's Way

Use 6" pipe (p-9) to close the Boone's Way loop

Use 12" pipe (P-7) from Boone's Way to new hangar

 $C_{HW}$  = 130 usually used for DIP. Used  $C_{HW}$  = 120 to reflect aged pipe.

#### PIPELINE DATA

STATUS CODE:

P N	 -	_		NAMES #2	LENGTH (ft)	D == 1 == = = = 1	ROUGHNESS COEFF.	LC
	 P-		T-1	J−1 т_1		20.00		

XX -CLOSED PIPE CV -CHECK VALVE

I I I E		DH 14777110	THE HELICITE D		1100001111200	24-11-0-1	
NAME	#1	#2	(ft)	(in)	COEFF.	LOSS COEFF.	
P-1	T-1	J−1	2800.00	20.00	120.0000	0.00	
P-2	Hyd 2762	J-1	7400.00	12.00	120.0000	0.00	
P-3	J-2	Hyd 2762	370.00	6.00	120.0000	0.00	
P-4	Hyd 1970	J-2	1178.52	6.00	120.0000	0.00	
P-5	J-3	Hyd 1970	296.48	6.00	120.0000	0.00	
P-6	J-4	J-3	380.00	8.00	120.0000	0.00	
P-7	J-4	J-5	450.00	12.00	120.0000	0.00	
P-8	J-2	Hyd 1968	647.67	6.00	120.0000	0.00	
. P-9	Hyd 1967	J-4	350.00	6.00	120.0000	0.00	
P-10	J-6	J-3	3900.00	6.00	120.0000	0.00	
P-11	J-1	J-6	5272.00	20.00	120.0000	0.00	
D-12	Hvd 1968	Hvd 1967	1142.33	6.00	120,0000	0.00	

N	ODE	E R	ESU	LTS					
		NODE NAME		NODE TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	NODE ELEVATION (ft)	PRESSURE HEAD (ft)	NODE PRESSURE (psi)
•	Hvd	 1967			0.00	947.49	860.00	87.49	37.91
		1968			0.00	964.03	848.00	116.03	50.28
	_	1970			0.00	953.08	876.00	77.08	33.40
	Hyd	2762			0.00	994.57	855.00	139.57	60.48
	-	J-1			0.00	1009.04	837.00	172.04	74.55
		J-2			0.00	973.41	857.00	116.41	50.45
		J-3			0.00	947.97	873.00	74.97	32.49
		J-4			0.00	942.42	859.00	83.42	36.15
		J-5			1200.00	940.57	850.50	90.07	39.03 🕶
		J-6			0.00	1008.81	850.00	158.81	68.82
		T-1		SW Tank		1010.00	946.00	64.00	27.73

#### PIPELINE RESULTS

PIPE NAME		E NUMBERS #2	FLOWRATE	HEAD LOSS (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL+ML/ 1000 (ft/ft)	HL/ 1000 (ft/ft)
P-1	T-1	J-1	1200.00	0.96	0.00	1.23	0.34	0.34
P-2	Hyd 2762	J-1	-802.19	14.47	0.00	2.28	1.96	1.96
P-3		Hyd 2762	-802.19	21.16	0.00	9.10	57.18	57.18
P-4	Hyd 1970	J-2	-420.02	20.33	0.00	4.77	17.25	17.25
P-5	J-3	Hyd 1970	-420.02	5.11	0.00	4.77	17.25	17.25
P-6	J-4	J-3	-817.83	5.55	0.00	5.22	14.60	14.60
P-7	J-4	J5	1200.00	1.86	0.00	3.40	4.12	4.12
P-8	J-2	Hyd 1968	382.17	9.38	0.00	4.34	14.48	14.48
P-9	Hyd 1967	J-4	382.17	5.07	0.00	4.34	14.48	14.48
P-10		J-3	397.81	60.84	0.00	4.51	15.60	15.60
P-11	J-1	J-6	397.81	0.23	0.00	0.41	0.04	0.04
P-12	Hyd 1968	Hyd 1967	382.17	16.54	0.00	4.34	14.48	14.48

MINOR

#### SCENARIO

P-10

P-11

P-12

Demand at the site = 1,500 gpm

SW Tank modeled at low tank = 1,010 ft

Use 8" pipe (P-6) from Kirby Rd to Boone's Way

Use 6" pipe (p-9) to close the Boone's Way loop

Use 12" pipe (P-7) from Boone's Way to the new hangar

Upsize to 8" pipe (P-3,4,5) along Kirby Rd. between south airport driveway entrance and Gifford Rd.

 $C_{HW}$  = 130 usually used for DIP. Used  $C_{HW}$  = 120 to reflect aged pipe.

P	IPELINE	DATA						
	PIPE	NO	DE NAMES	LENGTH	DIAMETER	ROUGHNES	S MINOR	
	N A M E	#1	#2	(ft)	(in)	COEFF.	LOSS COEFF	· •
-	P-1	т–1	J-1 J-1 Hyd 2762 J-2	2800.00	20.00	120.0000	0.00	-
	P-2	Hvd 2762	J-1	7400.00	12.00	120.0000	0.00	
	P-3	J-2	Hvd 2762	370.00	8.00	120.0000	0.00	
	P-4	Hvd 1970	J-2	1178.52	8.00	120.0000	0.00	
	P-5	J-3	Hvd 1970	296.48	8.00	120.0000	0.00	
	P-6	.T-4	.T-3	380.00	8.00	120.0000	0.00	
	P-7	.T-4	Hyd 1970 J-3 J-5 Hyd 1968	450.00	12.00	120.0000 120.0000	0.00	
	P-8	.T-2	Hvd 1968	647 67	6.00	120.0000	0.00	
	D_0	Hvd 1967	J-4	350 00	6.00	120.0000		
	D_10	11ya 1307	.T-3	3900.00	6.00	120.0000	0.00	
	D_11	.T1	J-3 J-6 Hyd 1967	5272 00	20.00	120.0000	0.00	
	D_12	H <sub>1</sub> ,2 1968	и <sub>то</sub> д 1967	11/12 33	6 00	120.0000	0.00	
	F-12	пуц 1900	11yu 1907	1142.55	0.00	120.0000	0.00	
N	ODE RES							
	NODE	NODE	EXTERNAL	HYDRAUL	IC NO	DE PRESSU	URE NODE	
	NAME	TITLE	DEMAND	GRADE	ELEVA'	TION HEAD	D PRESSUR	Œ
			DEMAND (gpm)	(ft	) ' (:	Et) (f	t) (psi)	
-								•
	Hyd 1967		0.00					
	Hyd 1968		0.00	963.	15 848	3.00 115	.15 49.90	)
	Hyd 1970		0.00	956. 981. 1008.	98 87	5.00 80	.98 35.09 .57 54.85	)
	Hyd 2762		0.00	981.	57 85	5.00 126	.57 54.85	
	J-1		0.00	1008.	55 83	7.00 171	.55 74.34	
	J-2						.86 49.77	
	J-3		0.00	953.	24 873	3.00 80	.24 34.77	1
	J-4		0.00	943.	10 859	9.00 84	.10 36.44	
	J-5		1500.00	940.	29 850	0.50 89	.10 36.44 .79 38.91 .34 68.61	
	J-6		0.00	1008.	34 850	0.00 158	.34 68.61	
	T-1	SW Tan	k	1010.	00 94	6.00 64	.00 27.73	1
_								
Ъ	I P E L I N E P I P E	RESU	L T S T NIMBERS	또ᄼᅜᄺᄝᄭᅋᅜ	מעשט	MTNOP .	T.TNE HT.+MT	./ нт./
		#1		LTOMESTE	TOSS	TOCC !	VELO. 1000	1000
	NAME	# 1	# 2	(gpm)	TO22	LUSS (:	ft/s) (ft/ft	(ft/ft
_								
	P-1	T-1	J-1	1500.00	1.45	0.00	1.53 0.52	0.52
	P-2	Hyd 2762	J-1	-1122.94	26.98	0.00	3.19 3.65	3.65
	P-3	J-2	Hyd 2762	-1122.94	9.72	0.00	7.17 26.26	26.26
	P-4	Hyd 1970	J-2	-755.91	14.87		4.82 12.62	
	P-5	J-3	Hyd 1970	-755.91	3.74		4.82 12.62	
	P-6	J-4	J-3	-1132.98	10.15		7.23 26.70	
	P-7	J-4	J-5	1500.00	2.80		4.25 6.23	
	P-8	J-2	Hyd 1968	367.02	8.70		4.16 13.44	
	P-9	Hyd 1967	J-4	367.02	4.70		4.16 13.44	
	± 2	11 y a 1 2 0 /	7 0	277.02	FF 00	0.00	4 00 14 17	1/17

377.06

377.06

367.02

55.09

0.21

15.35

0.00

0.00

0.00

4.28

0.39

4.16

14.13

0.04

13.44

J-3

J-6

J-6

J - 1

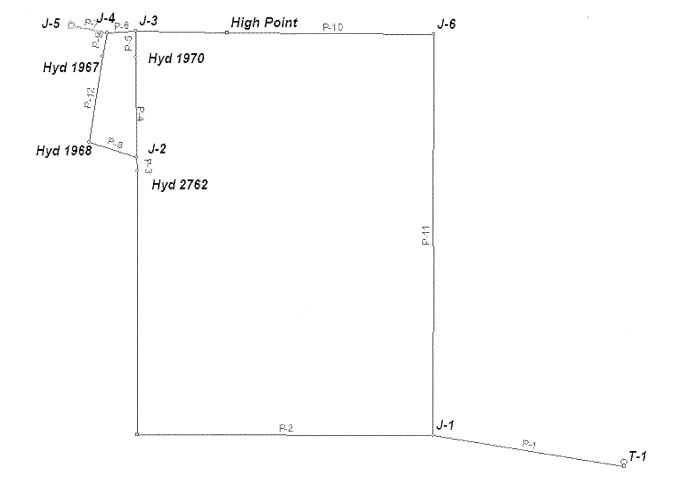
Hyd 1968 Hyd 1967

70F/7

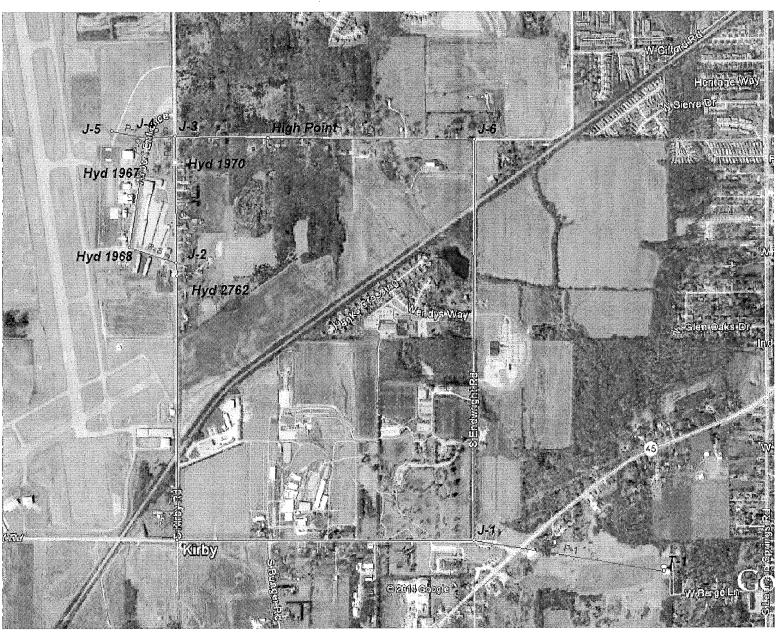
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80F17



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90F17

## **N.O.I. TO CONSTRUCT WATER LINE EXTENSIONS**





### NOTICE OF INTENT TO CONSTRUCT A WATER MAIN EXTENSION

State Form 49008 (R2 / 10-14) Approved by State Board of Accounts, 2014

General Construction Permit For Water Main Extensions						
1. Title of proposed project		2. County of proposed project				
BMG Aviation Inc. at Monroe County Airport		Monroe				
3. Location of proposed project (including nearest public intersection an	•					
800 ft west of the intersection of S. Kirby Rd. and W. G	difford Rd. SE 1/4 Sect. 3 a	and NE 1/4 Sect. 10, 18N, R2VV Van				
Buren Township.						
4. Name, title, e-mail address and firm of responsible person (as define		5. Telephone number of responsible person (812) 825-5406				
Bruce Payton, Airport Director, Board of Aviation Commission of Monroe Co	ounty - email: bmg@bluemarble.net	( 812 ) 823-3400				
6. Address of responsible person 972 S. Kirby Rd., Bloomington, IN 47403						
7. Name of Public Water System (PWS) City of Bloomington Utilities		8. PWS identification number 525-3002				
9. Address of PWS	- Mariana	10. Telephone number of PWS				
600 E. Miller Dr., Bloomington, IN 47401		( 812 ) 349-3631				
11. Name and firm of professional engineer		12. Telephone number of professional engineer (812) 332-8030				
Jeffrey S. Fanyo, P.E Bynum Fanyo & Associates, Inc.  13. Address of professional engineer		[(012) 332-0030				
528 N. Walnut St., Bloomington, IN 47404						
14. Name and e-mail address of developer (If applicable)		15. Telephone number of developer				
Bobbie Burke - BMG Aviation, Inc email: info@bmgavia	ition	( 812 ) 825-7979				
16. Address of developer 984 S. Kirby Rd., Bloomington, IN 47403						
17. Timing of construction (check one of the following):						
☐ The proposed construction of the water main will begin on		and be completed				
	not begin construction less than thirt	ty (30) days after IDEM receives a complete and				
sufficient NOI.)						
☑ The proposed construction schedule will be submitted separate from and will include a copy of the information on the first page of this No.	OI. (Cannot begin construction less the	han thirty (30) days after IDEM receives a				
18. Fee Schedule:	The complete NOI form may be submail to the address below. If a fee is requ	mitted by e-mail (dwnoi@idem.in.gov) or by certified uired, the check along with a copy of the first page of the				
☐ No fee, exempted under 327 IAC 8-3-7(a).	completed NOI form must be sent to:	and, the disestations with a copy of the met page of the				
☑ No fee for water main extensions under 2,500 linear feet.		NG WATER BRANCH				
☐ \$150 for water main extensions from 2,501 to 5,000 linear feet.		nt of Environmental Management North Senate Avenue				
☐ \$250 for water main extensions from 5001 to 10,000 linear feet.	Indiana	apolis, Indiana 46204				
\$500 for water main extensions greater than 10,000 linear feet.	Make checks payable to:	I.D.E.M. (Acct.# 3240-414000-140000).				
19. Certifications:						
Responsible Person:						
"I certify that I have reviewed and understand the applicability and eligibility requirements of this rule and that the water main proposed with the submission of this NOI meets the applicability and eligibility requirements of this rule. I also certify that the design and construction of this project will be performed under my direction or supervision to assure conformance with 327 IAC 8-3.5 and will meet all local rules or laws, regulations and ordinances. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the						
possibility of fine and imprisonment.  Signature of responsible person		Date signed (month, day, year)				
Oignature of responsible person						
Professional Engineer: "I certify under the penalty of law that the design of this project will be performed under my direction or supervision to assure conformance with 327 IAC 8-3.5 and that the plans and specification will require the construction of said project to be performed in conformance with this rule. The design of the proposed project will meet all local rules or law, regulations and ordinances. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."						
Signature of professional engineer		Date signed (month, day, year)				
Oignature of professional engineer						

Developer: "I certify under the penalty of law that the construction of thi 8-3.5. The construction of proposed project will meet all loc knowledge and belief, true, accurate, and complete. I am a fine and imprisonment."	al rules or laws, regulation	is and ordinances. Th	e information	submitted is, to the b	est of my
Signature of developer:	Date signed	(month, day, year)			
PWS Representative: "I certify under the penalty of law that I have agreed to furniresponsibility for examining the plans and specifications to do I also acknowledge the public water system's responsibilitie information, including the possibility of fine and imprisonment	etermine that the proposed s as outlined in 8-3.5-12. I	d water main meet loc	al rules or law	s and ordinances.	
Signature of PWS representative:			Date signed	(month, day, year)	
Project Design Criteria:					
	tive Technical Standards	s (327 IAC 8-3.2-20)			
20. Are any "Alternative Technical Standards" proposed to be Yes, I have attached copies of the approval with the					!
F	Public Water System Cap	pacity Status			
21. The PWS's Daily Production Firm Capacity: A.	24	MGD	B.	16,667	GPM
22. The PWS's five (5) highest demand days in the previous	us two (2) years only:				
Demand (MGD)	Date	)			
1. 20.70	8/30/20	013			
2. 19.60	9/6/20	13			
3. 19.50	8/27/20	013			
4. 19.40	8/29/20	013			
5. 19.20	2/1/20	14			
23. Average of five (5) Peak Daily Demand (PDD) listed ab	ove:		C.	19.68	MGD
24. Ratio of PDD to PWS Daily Production Capacity = (Item	n D = Item C / Item A x 100	0)	D.	82.0	%
25. Anticipated Customer Demand of Proposed Water N	Main		1		
Residential Customers:					
E. Number of homes F. Average Daily Demand times Peagpm/home)	iking Factor (at least 0.87	Total Average Daily	Demand time	s Peaking Factor (G :	= E x F) G. gpm
Other (Commercial and Industrial) Customers:					
Description (including size of domestic meter):		y Demand(the "Safe N apacity" of domestic me			
					gpm
					gpm
		Sub Total:	H.		gpm
Total Customer Demand of Proposed Water Main (gpm) = (	Item G + item H)		1.		gpm
Ratio of total Customer Demand of Proposed Water Main (Capacity (gpm) (Item J = Item I/ Item B x 100)	(gpm) to the PWS Daily Pi	roduction Firm	J.		%

### **LETTER FROM LOCAL FIRE CHIEF**

13047



### From the desk of

Bill Tusing Chief

April 7, 2015

To Whom It May Concern:

I understand that the BMG Aviation hangar will be 45.325 sq. ft. which is 5,325 larger than the 40,000 sq. ft. allowable for a single fire area in a Group II hangar as defined in FNPA 409. However, the BMG hangar will have a maximum door opening within the allowances of Group II and the hangar will be primarily used for storing smaller private aircraft with no major maintenance or overhaul. It is also divided into two sections with the largest section being 29,600 sq. ft. For these reasons I agree with the proposed variance to classify the hangar as Group II with a single 45,325 sq. ft. fire area.

In addition, I understand that BMG aviation will increase the water flow at Monroe County Airport by connecting the current airport main with the water main junction at Kirby Rd and Gifford Rd to create a looped main. A 12" water main will run from this loop to the new facility. With the planned water main upgrades, flow at the hangar will be increased to 1200 gpm. NFPA 409.7 states that the sprinkler system in a Group II hangar must have flow rate of 0.17gpm over any 5,000 sq. ft. area (860gpm) plus an additional 500 gpm for exterior hoses for a total flow of 1350 gpm. Even with the proposed upgrades the water supply will still not meet the 1350 gpm requirement, but it will exceed the flow requirement of the sprinkler system plus a standard exterior hose flow of 250 gpm (1100 gpm total). Because of the hangar's intended use storing smaller private aircraft, along with the Fire Department's close proximity to the BMG Aviation hangar and the availability of stored water within 2 miles, I agree with the proposed variance to reduce the exterior hose flow requirement to 250 gpm.

If you need any further information or have any questions, please feel free to phone or email me.

Regards,

Bill Tusing, Fire Chief

Van Buren Township

812.825.9500

vbtbill@bluemarble.net

Hart 1

### **DRAWING OF PROPOSED WATER LINE EXTENSION**

15aA7



# MICHAEL R. PENCE, Governor STATE OF INDIANA

DEPARTMENT OF HOMELAND SECURITY

JOHN H. HILL, EXECUTIVE DIRECTOR

Indiana Department of Homeland Security Indiana Government Center South 302 West Washington Street Indianapolis, IN 46204 317-232-3980

#### Dear Applicant:

We are in receipt of the submitted application and support documents for your project **NEW FBO FACILITY FOR BMG AVIATION**, and it has been assigned State Building Commissioner (SBC)
project number **375119**. We have evaluated the documents submitted for your project. Your project has been selected to receive a full plan review for compliance with all of the applicable rules of the Fire Prevention and Building Safety Commission, and it has been assigned to **CRAIG BURGESS**. Your time in the plan review queue begins on the date of this notice 07/27/2015.

Within twenty (20) days of the date of this letter, you will receive either a Request for Information regarding one or more rules of the Commission or a Construction Design Release.

Sincerely, CRAIG BURGESS cburgess@dhs.in.gov 3172341423

160F/7